WHAT IS CLAIMED IS:

1. A lance-type spraying assembly for directing a liquid reducing agent comprising:

a lance body having an inlet end and a downstream end; and

a spray nozzle arranged at the downstream end of the lance body;

wherein the lance body includes an air passage for connection to an air supply, a liquid reducing agent supply passage for connection to a liquid reducing agent supply and a liquid reducing agent return passage, the liquid reducing agent supply passage communicating with the spray nozzle, the liquid reducing agent return passage communicating with the liquid reducing agent supply passage near the downstream end of the lance body for recirculating a portion of the liquid reducing agent and extending near the liquid reducing agent supply passage along at least a portion of the length thereof in order to help cool the liquid reducing agent therein, the liquid reducing agent return passage being sealed against the spray nozzle, and the air passage extending near at least a portion of the liquid reducing agent supply passage in order to help cool the liquid reducing agent therein.

2. The spraying assembly of claim 1 further including an external cooling jacket surrounding the lance body.

3. The spraying assembly of claim 2 wherein the external cooling jacket comprises a liquid cooling jacket.

4. The spraying assembly of claim 2 wherein the external cooling jacket comprises a vacuum insulator jacket.

5. The spraying assembly of claim 2 wherein the external cooling jacket comprises an insulation jacket.

6. The spraying assembly of claim 2 wherein the external cooling jacket comprises an air cooling jacket.

7. The spraying assembly of claim 1 wherein the liquid reducing agent return passage extends in surrounding relation to the liquid reducing agent supply passage.

8. The spraying assembly of claim 7 wherein the air passage extends in surrounding relation to the liquid reducing agent return passage.

9. The spraying assembly of claim 1 wherein the spray nozzle is an air atomizing spray nozzle and the air passage communicates with the spray nozzle.

10. The spraying assembly of claim 1 wherein air passage includes a discharge end near the downstream end of the lance body for discharging air in surrounding relation to the spray nozzle.